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Editor, EDGAR W. WOOLARD

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METEOROLOGICAL AND CLIMATOLOGICAL DATA FOR AUGUST 1943

[Climate and Crop Weather Division, J. B. KINCER, in charge]

AEROLOGICAL OBSERVATIONS

NOTICE.—Effective with the December 1942 issue, the publication of table 1 (RAOB summaries) was discontinued indefinitely.—EDITOR.

TABLE 2.—*Free-air resultant winds based on pilot-balloon observations made near 5 p. m. (75th meridian time) during August 1943. Directions given in degrees from north (N=360°, E=90°, S=180°, W=270°). Velocities in meters per second*

Altitude (meters) m. s. l.	Abilene, Tex. (538 m.)			Albuquerque, N. Mex. (1,630 m.)			Atlanta, Ga. (299 m.)			Billings, Mont. (1,095 m.)			Bismarck, N. Dak. (512 m.)			Boise, Idaho (870 m.)			Brownsville, Tex. (7 m.)			Buffalo, N. Y. (220 m.)			Burlington, Vt. (132 m.)			Charleston, S. C. (17 m.)			Cincinnati, Ohio (152 m.)			Denver, Colo. (1,627 m.)			El Paso, Tex. (1,196 m.)		
	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity
Surface	31	162	2.4	31	243	2.3	30	278	0.6	31	43	11.7	31	141	0.5	31	325	3.3	31	125	7.3	30	249	3.5	30	244	1.3	29	169	1.2	31	12	0.7	30	72	0.3	31	217	2.6
500							30	286	0.8										31	132	6.9	30	258	4.9	30	234	2.9	29	186	2.3	31	293	0.8						
1,000	31	155	4.1				30	307	1.3				31	100	0.5	31	319	3.7	31	140	5.8	29	264	5.6	30	261	4.4	28	266	1.1	31	285	2.2						
1,500	31	162	3.9				29	318	1.8	31	45	0.4	28	228	1.2	31	314	2.5	29	141	3.4	24	269	6.7	27	274	7.0	27	324	0.9	31	282	3.7				31	224	2.1
2,000	31	163	4.2	31	228	2.8	27	334	2.9	31	234	1.6	26	263	3.9	31	274	2.5	26	137	2.2	21	275	7.2	24	271	8.1	23	342	2.3	30	281	5.0	30	44	0.6	31	223	1.2
2,500	31	162	2.8	31	227	2.4	27	333	3.1	31	257	3.3	25	277	5.2	31	253	4.1	25	120	2.2	17	284	8.0	19	277	8.6	22	355	3.4	24	285	5.2	30	45	0.7	31	228	0.8
3,000	31	173	2.0	31	233	2.8	26	339	3.8	29	259	6.8	25	277	7.3	30	239	6.5	22	91	1.7	14	289	8.3	15	285	8.3	22	3	3.6	21	290	5.9	30	270	0.6	31	126	0.8
4,000	30	169	0.4	31	224	3.7	21	335	4.0	27	254	12.2	25	282	13.0	28	232	9.5	21	79	2.3	10	289	9.4				21	10	3.5	17	290	8.3	27	259	4.0	29	158	1.4
5,000	29	87	1.5	30	219	3.9	17	324	6.0	26	252	15.3	23	280	15.3	27	232	12.0	20	95	3.9							17	354	3.9	12	304	9.3	24	256	7.5	27	162	2.4
6,000	26	105	2.0	29	220	4.8	15	334	6.1	24	260	18.8	19	275	18.1	25	232	14.1	18	94	4.6							15	333	4.5	10	296	12.0	19	257	8.4	21	162	3.9
8,000	22	113	3.3	23	210	8.7	10	326	6.7	19	252	23.3	11	277	24.8	23	236	20.5										10	343	4.3				15	253	15.2	18	158	6.2
10,000	18	131	5.1	17	213	10.0				13	252	28.3				16	237	27.8																11	247	18.8	15	154	7.1
12,000	16	121	6.6	11	201	10.6																																	
14,000	13	128	6.5																																				

Altitude (meters) m. s. l.	Ely, Nev. (1,910 m.)			Grand Junction, Colo. (1,413 m.)			Greensboro N. C. (271 m.)			Havre, Mont. (767 m.)			Jacksonville, Fla. (16 m.)			Joliet, Ill. (178 m.)			Las Vegas, Nev. (573 m.)			Little Rock, Ark. (88 m.)			Medford, Oreg. (410 m.)			Miami, Fla. (15 m.)			Mobile, Ala. (66 m.)			Nashville, Tenn. (194 m.)			New York, N. Y. (15 m.)		
	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity
Surface	31	204	4.6	31	55	0.7	30	171	0.3	30	284	2.1	30	117	2.2	31	219	1.7	31	176	3.2	31	144	1.1	31	311	2.3	30	161	1.3	30	177	0.7	31	299	1.6	31	159	2.1
500							30	209	0.4				30	169	1.5	31	226	2.6				31	157	1.5	31	310	2.6	30	163	1.9	30	177	0.6	31	305	2.1	31	225	3.3
1,000							30	255	0.8	30	270	3.1	30	260	0.9	31	252	3.6	30	182	4.9	31	255	0.5	31	308	2.6	29	184	1.4	28	350	0.6	30	296	2.2	30	254	4.8
1,500				31	96	0.9	30	290	1.6	30	258	4.0	29	286	2.3	29	263	4.9	31	191	5.9	31	273	1.6	31	283	2.1	27	230	1.2	26	14	1.5	29	306	2.5	29	273	6.2
2,000	31	204	5.1	31	133	1.5	30	306	2.7	30	250	5.6	27	321	2.8	25	275	5.9	31	195	5.0	30	307	2.2	31	240	2.2	25	253	1.4	24	16	2.2	26	308	3.0	25	283	7.5
2,500	31	208	5.2	31	221	0.9	29	313	4.1	29	253	6.5	27	336	2.5	24	284	7.2	31	206	4.7	28	314	2.4	30	216	3.1	23	247	1.1	18	20	2.9	26	318	3.3	22	288	9.2
3,000	31	206	5.2	31	236	2.8	23	320	5.4	29	252	8.9	26	352	2.0	22	291	7.6	31	215	5.7	28	317	3.0	30	215	3.9	21	235	1.3	16	28	3.0	23	322	4.0	13	306	10.6
4,000	30	222	7.0	29	246	5.0	22	325	5.8	23	257	12.7	22	10	2.4	18	301	10.3	29	230	6.4	24	323	4.4	28	242	5.8	11	144	2.3	11	24	3.4	17	326	4.8			
5,000	27	236	9.4	22	240	6.4	18	328	7.4	19	260	14.6	19	16	2.8	12	304	11.9	23	225	6.8	19	324	5.3	26	254	7.2	10	254	0.6				17	320	7.9			
6,000	22	235	11.4	17	238	7.7	17	328	9.5	15	262	15.3	17	13	3.5				22	221	7.8	17	329	5.6	23	255	8.8							13	328	8.1			
8,000	21	240	16.9				12	307	10.2				13	31	3.9				18	224	12.3	15	333	3.7	17	269	9.4							11	321	10.9			
10,000	16	237	21.8				10	331	10.2				14	40	7.2				17	223	20.6	13	321	2.7	11	264	8.3							10	333	13.6			
12,000	14	236	27.4										14	44	11.9				16	220	23.9	10	19	3.1														
14,000													10	44	11.1																								

Altitude (meters) m. s. l.	Oakland, Calif. (8 m.)			Oklahoma City, Okla. (402 m.)			Omaha, Nebr. (306 m.)			Phoenix, Ariz. (388 m.)			Rapid City S. Dak. (982 m.)			St. Louis, Mo. (181 m.)			St. Paul, Minn. (225 m.)			San Antonio, Tex. (240 m.)			San Diego, Calif. (15 m.)			Sault Ste. Marie, Mich. (230 m.)			Seattle, Wash. (12 m.)			Spokane, Wash. (603 m.)			Washington, D. C. (24 m.)		
	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity
Surface	31	269	5.9	31	176	4.9	31	137	1.8	31	275	0.8	31	89	0.6	31	209	1.2	31	187	1.3	31	146	3.0	31	267	3.8	31	285	3.8	31	263	2.0	31	236	2.2	31	238	1.2
500	31	274	3.0	31	175	5.0	31	147	2.5	31	251	1.2				31	220	1.7	31	213	1.2	31	140	4.3	31	259	2.3	31	292	4.8	31	260	1.2				31	252	1.7
1,000	30	258	2.5	31	179	5.2	31	170	3.7	31	233	2.1	31	80	0.6	31	232	1.9	29	229	2.9	31	137	4.0	31	253	0.8	29	295	5.8	30	219	1.9	31	235	3.2	30	272	2.7
1,500	30	242	2.8	31	188	5.0	31	208	4.8	31	224	2.1	31	166	0.6	31	264	3.8	27	249	4.7	31	140	4.2	31	200	0.9	26	293	5.1	26	219	2.5	31	226	3.6	28	287	3.9
2,000	30	224	2.6	31	202	4.6	29	237	6.4	31	216	2.9	31	209	1.5	30	269	4.8	25	259	6.8	29	144	3.4	31	178	1.9	25	292	5.9	22	220	2.9	30	218	4.3	24	296	5.1
2,500	29	233	3.2	31	220	4.2	28	255	8.7	31	215	3.0	30	248	3.5	27	286	5.0	24	271	7.9	28	124	1.9	31	179	2.4	20	293	7.2	19	241	3.5	27	231	5.4	21	301	6.0
3,000	29	237	4.1	31	227	3.5	28	268	9.4	31	198	2.9	29	250	5.3	26	295	6.5	21	283	9.9	25	124	1.6	31	201	2.3	17	300	8.4	18	247	4.3	25	243	7.4	17	297	7.4
4,000	29	242	6.8	29	267	3.6	23	291	9.1	29	188	3.5	28	269	8.8	25	293	8.4	18	286	11.0	24	110	2.0	31	216	2.4	11	296	10.5	17	254	6.1	23	248	10.8	11	313	9.4
5,000	28	242	8.0	27	277	3.9	21	296	11.6	29	179	4.9	28	269	11.6	20	301	9.4	17	294	15.2	19	102	3.0	29	214	3.4				15	236	6.4	23	249	11.5			
6,000	27	240	9.0	24	276	4.0	18	293	13.0	26	179	5.5	21	271	15.2	12	304	10.7	14	294	17.9	15	89	4.0	27	209	4.4				12	246	8.0	22	255	13.7			
8,000	25	237	12.7	14	273	4.2	12	287	19.8	22	191	6.9	14	269	21.7	10	291	12.8				10	93	8.3	14	199	6.0							16	254	15.1			
10,000	24	235	19.0							21	190	9.0	11	268	32.8																			12	252	17.3			
12,000	19	231	23.7							19	201	11.4																											
14,000										16	203	12.6																											

TABLE 3.—*Maximum free-air wind velocities (m. p. s.), for different sections of the United Stations, based on pilot-balloon observations during August 1943*

Section	Surface to 2,500 meters (m. s. l.)					Between 2,500 and 5,000 meters (m. s. l.)					Above 5,000 meters (m. s. l.)				
	Maximum velocity	Direction	Altitude (m.) m. s. l.	Date	Station	Maximum velocity	Direction	Altitude (m.) m. s. l.	Date	Station	Maximum velocity	Direction	Altitude (m.) m. s. l.	Date	Station
Northeast [1]	30.2	ssw.	550	14	Nantucket, Mass.	41.4	wnw.	4,620	26	Portland, Maine	62.4	wnw.	11,390	11	Albany, N. Y.
East-Central [2]	30.2	w.	1,160	27	Huntington, W. Va.	31.2	wnw.	4,830	16	Elkins, W. Va.	37.6	sw.	10,540	19	Norfolk, Va.
Southeast [3]	18.8	ene.	630	19	Charleston, S. C.	17.5	w.	2,730	28	Atlanta, Ga.	45.0	ene.	13,780	14	Key West, Fla.
North-Central [4]	34.6	sw.	2,280	31	Green Bay, Wis.	40.0	w.	4,350	13	St. Paul, Minn.	71.2	wnw.	8,700	17	Bismarck, N. Dak.
Central [5]	45.3	ssw.	1,600	30	Dodge City, Kans.	34.3	w.	3,150	12	Joliet, Ill.	53.2	nnw.	10,420	1	Fort Wayne, Ind.
South-Central [6]	35.6	sw.	1,100	12	Texarkana, Ark.	26.0	ne.	4,830	9	Big Spring, Tex.	27.6	ese.	12,750	9	San Antonio, Tex.
Northwest [7]	37.6	sw.	2,120	7	Havre, Mont.	40.6	nw.	4,920	29	Medford, Oreg.	70.0	sw.	11,260	5	Great Falls, Mont.
West-Central [8]	31.8	w.	2,090	31	Cheyenne, Wyo.	40.0	sw.	5,000	29	Elko, Nev.	59.9	sw.	13,290	4	Redding, Calif.
Southwest [9]	24.8	sw.	2,180	2	Sandberg, Calif.	21.6	sw.	3,720	24	Las Vegas, Nev.	45.3	sw.	11,710	24	Las Vegas, Nev.

[1] Maine, Vermont, New Hampshire, Massachusetts, Rhode Island, Connecticut, New York, New Jersey, Pennsylvania, and northern Ohio.
[2] Delaware, Maryland, Virginia, West Virginia, southern Ohio, Kentucky, eastern Tennessee, and North Carolina.
[3] South Carolina, Georgia, Florida, and Alabama.
[4] Michigan, Wisconsin, Minnesota, North Dakota, and South Dakota.
[5] Indiana, Illinois, Iowa, Nebraska, Kansas, and Missouri.
[6] Mississippi, Arkansas, Louisiana, Oklahoma, Texas (except El Paso), and western Tennessee.
[7] Montana, Idaho, Washington, and Oregon.
[8] Wyoming, Colorado, Utah, northern Nevada, and northern California.
[9] Southern California, southern Nevada, Arizona, New Mexico, and extreme west Texas.

RIVER STAGES AND FLOODS

By BENNETT SWENSON

Severe drought conditions continued during August in south-central portions of the country while a few localized floods occurred in northern sections. A disastrous flash flood in West Virginia on August 4–5 resulted in the loss of 23 lives and property losses of over a million dollars. Other floods were confined principally to eastern Iowa and neighboring areas, and Utah.

Precipitation during August followed very closely the pattern which has prevailed during the summer months, June to August. August precipitation was 25 percent of normal, or less, in sections extending from the lower Ohio River basin southwestward to Texas, in eastern Maryland, eastern Virginia, and most of California and Nevada. For the summer months the precipitation in the same areas was generally 50 percent or less of normal. On the other hand, the extreme Northeast, the upper Mississippi and Missouri Valleys, the far Northwest, and portions of Arizona, Utah, and New Mexico, had above-normal precipitation.

Atlantic Slope drainage.—River stages in most of New England were well above normal. Elsewhere in the Atlantic Slope drainage, the rivers continued generally below normal during the month.

Light flooding occurred in the Waccamaw River on August 22–27 and again on August 30–31. On August 18–19, Conway, S. C., reported 4.38 inches of rain in 48 hours. The river rose to a stage of 7.3 feet on August 24–25. On August 29–30 heavy rain again occurred amounting to 5.45 inches at Conway. This rain was evidently local as the river rose only 0.5 foot, cresting at 7.3 feet at Conway on August 30. Flood stage at Conway is 7 feet.

East Gulf of Mexico drainage.—Unusually low stages prevailed; at Columbus, Miss., on the Tombigbee River, the river was within 0.1 foot of the lowest stage of record, 0.0 foot.

Upper Mississippi Basin.—Moderately high stages prevailed throughout the basin. Flooding was confined to streams in eastern Iowa and adjacent areas, with severe floods in the Skunk River.

Excessive rainfall during the night of August 2–3, averaging about 7 inches in portions of Washington and Jefferson Counties, Iowa, and over 2 inches in adjacent counties, caused the Skunk River to rise rapidly from Coppock, Iowa, to the mouth. Before the heavy rains set in, the river was moderately high and rising slowly. From the 2d to the 3d the stage at Coppock rose sharply from a stage of 9.7 feet to 17.4 feet, and crested at 21.6 feet on the morning of the 4th. The record stage at Coppock is 22.1 feet, which occurred on June 15, 1930. At Augusta, Iowa, the river crested at 20.3 feet on the 6th, compared with a stage of 22.55 feet on June 17, 1930.

During the middle of the month the Raccoon River was at medium flood stage.

Heavy rainfall, averaging about 5 inches in the Canton, Mo.-Quincy, Ill., area on August 8, caused sharp rises in the Mississippi River below Quincy. The river exceeded flood stage slightly at Hannibal and Louisiana, Mo., on August 8 and 9.

The following report is submitted by the official in charge, Weather Bureau Office, Dubuque, Iowa, relative to a series of heavy showers and flooding in streams in northeastern Iowa, southwestern Wisconsin and northwestern Illinois on August 13:

A series of heavy showers on August 13, attended by moderate to severe electrical activity struck much of the region near the Mississippi River, from the Iowa-Minnesota border to (or beyond) Bellevue, Iowa. This occurred mostly between midnight and 6 a. m.

Rainfall along the Mississippi was reported in amounts which ranged from 1.90 to 4.00 and 4.50 inches, the latter figures being recorded, respectively, at Prairie du Chien, Wis., and McGregor, Iowa. Similar conditions prevailed over the Turkey River Valley and many of the small tributaries in Iowa, Wisconsin, and extreme northwestern Illinois.

Many tributaries overflowed, and flooded bottomland fields, which, if in crops, were mostly in corn. In most sections the water receded from fields rapidly enough so that little or no damage resulted.

In several urban communities the storm sewers were overtaxed, with considerable property damage resulting, particularly in McGregor, Iowa, where the damage was estimated at about $25,000. Railroads suffered considerable loss because of track washouts near McGregor and Monona, Iowa, and Prairie du Chien, Glenhaven, and Wauzeka, Wis. Monetary losses were reported at about $3,000.

In Galena, Ill., a rapid rise of the Galena River threatened a severe flood, but the rise was very flashy and a serious overflow did not materialize. The stream started to recede before any severe damage was done. A similar flashy behavior was reported in practically all streams, including the Mississippi where most of the rise occurred below Prairie du Chien, and particularly in the im-